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A
SYNOPSIS,

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A
SYNOPSIS
OF
A COURSE OF LECTURES
ON
COMPARATIVE ANATOMY and *PHYSIOLOGY.*

By Sir BUSICK HARWOOD, Knt.
M. D. F. R. S. and S. A.
Downing Professor of Medicine and Professor of Anatomy in the University of Cambridge.

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1807.

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LORD HENRY PETTY

CHANCELLOR OF THE EXCHEQUER

And one of the Representatives in Parliament for the University of Cambridge

&c. &c. &c.

THIS SYNOPSIS

OF

A COURSE OF LECTURES

ON

COMPARATIVE ANATOMY and PHYSIOLOGY

Which were honoured by his Lordship's attendance during his Residence in the University

With sentiments of esteem and gratitude

Is respectfully inscribed

By his Lordship's

Most faithful and obedient servant

Busick Harwood

February 2, 1807.

ADVERTISEMENT.

MANY years have elapsed since the Professor of Anatomy, in the delivery of public Lectures in this University, found it expedient to transgress the limits of *Human Anatomy,* to which he had originally confined himself, and to take a more comprehensive view of the Science under the title of *Comparative Anatomy.* By the term *Comparative Anatomy* he means to include not only an enquiry into the Organization of Men and of other Animals, with their respective relations and distinctions, but also into such Analogies as are found to exist between the Animal and the Vegetable kingdoms. It is moreover his intention that this plan of Lectures should comprehend a succinct account of the progressive scale of Animal and Vegetable existence, so as to impress the minds of his hearers with the sublime truths deducible from the *Philosophy* of *Natural History.*

This alteration in his Course of Lectures has not been made without mature deliberation; and he looks for the indulgent acquiescence of the few medical students for whose use the Synopsis was originally intended.

The Professor laments that a long and severe illness has delayed for a time the completion of a descriptive Catalogue of Preparations to which reference will be made in the course of his Lectures.

INTRODUCTION.

Hiſtory of Comparative Anatomy.

1. RISE, Progreſs, and preſent ſtate of the Science.

Of its general utility.

Of the various kinds of preparations for inveſtigating the more obſcure parts of an animal body, and the Inſtruments made uſe of for the purpoſe of preparing and preſerving them.

Cautions concerning the uſe of anatomical preparations.

2. Explication of the general Terms of Anatomy.

OF THE
ANIMAL *and* VEGETABLE *Kingdoms.*

3. Linnæus's definition of Stones, Plants, and Animals.

4. General analogies ſubſiſting between the *Animal and Vegetable Kingdoms*, and the imperceptible gradations by which we paſs from one *kingdom* to the other.
5. Of the external coverings of Animals and Vegetables, and the changes produced in them by bleaching.
6. Of Bones, Wood, and Pith.
7. Of the nouriſhment of Plants and Animals.
   Of their digeſtive Organs.
   Of *Chyle* and *Sap*.
   Nouriſhment of the Fœtus.
8. Of the Circulation of the *Sap* in *Vegetables*.
   Of Animals deſtitute of Hearts.
9. *Of the Reſpiration of Vegetables.*
   Of the Lungs of Animals and Vegetables, and the Gills of Fiſhes.
   Of the Suffocation of Plants and Inſects.

10. Of Hybernation.
Of the Perſpiration of Plants.
Why Plants improve the air by day and injure it by night.
11. Of the ſecretory organs of Plants and Animals.
12. Of the Sleep of Plants.
13. Animal *Senſation* compared with vegetable *Irritability*.
Of vegetable muſcular motion.
Of the locomotion of Plants and Animals.
Of their power of re-production.
Of amphibious Plants and Animals.

Of the Diſſemination, natural Duration, Decay, and Decompoſition of Plants and Animals.

14. Of the Sexual Syſtem.
Various modes of Impregnation in Plants and Animals

Propagation of Plants and Animals by Eggs, Seeds, Buds, Cuttings, and Ingrafting.

Of the *Seminal* Leaves and *Placentation* of Plants and Animals.

Of androgynous Plants and Animals.

Of Mules, Monſters, and Varieties.

15. Of annual Plants and Animals. Of their puberty, old age, and diſeaſes.

Of Poiſonous Animals and Plants.

16. Of the decompoſition of Animal and Vegetable Subſtances.

Of Animals in general.

17. Progreſſive ſcale of Animated Beings.

Of the imperceptible gradations by which the various claſſes of Animals paſs into each other.

18. Of the Society, Habitations, Hoſtilities, Migration, &c. of Animals.
    Of the Armour of Animals, and the Inſtruments with which they are furniſhed for procuring food, and ſeizing their prey.

19. Of the Transformation which ſome ſpecies undergo.
    Of their Duration and the natural Changes which Animals undergo.
    Of the longevity of Man in the earlier ages.
    Effects of Climate, Diet, &c. in prolonging Life.
    Inſtances of extraordinary longevity.
    Age of Fiſhes diſcoverable by their ſcales, &c.

20. Obſervations on the comparative ſize and ſtrength of Animals.

Of Intellect and Inſtinct.

21. Examples of pure Inſtinct.

Of Animals endowed with Inſtincts, which can accommodate themſelves to peculiar circumſtances.

22. Of Inſtincts improveable by experience and obſervation.

Some Animals endowed with a greater number of Inſtincts than others.

The ſuperiority of Man over all other Animals depends upon the greater number of his natural Inſtincts.

Of the progreſs of Inſtinct in Children.

23. Education of Children and Domeſtication of Animals.

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Of the Nature and Properties of the Blood of Animals.

24. Of recent Blood drawn from the vein of an Animal.

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25. The properties and uſe of this fluid.

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26. Compoſed of two parts.
Separation of theſe parts by waſhing in water.

Particular Examination of each of theſe Parts.

RED GLOBULES.

27. Suppoſed cauſe of their red colour.

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28. Theories of Lewenhoec, Hewſon, and others.

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29. Its peculiar properties.
30. Theory of the formation and regeneration of parts, by means of the *Coagulable Lymph.*
31. Difference between arterial and venous blood.
32. Prieſtley's Doctrine and Experiments.
33. Human Blood compared with that of Animals.

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34. Method of performing the operation.
35. Effects of *Transfuſion* on various Animals.

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36. Their gradual increaſe and elongation.
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37. Cicatrices, how formed.

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38. General idea of their ſtructure and various uſe.
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39. The beginning and progreſs of *Oſſification.*
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40. General ſtructure of bones.
41. Chemical analyſis of bone.
42. Of their nerves and blood-veſſels.
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43. Manner in which it is connected with the bones.
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Of the MARROW.

44. Its nature and uſe.
45. Of the *pori medullares.*
46. General effects of the *Lues Venerea* upon Bones.
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47. Uſe of the bones in general.

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48. Their ſtructure, ſituation, and manifold uſes.

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49. Of the ſtructure and uſe of ligaments in general.

50. Of capſular ligaments in particular.

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51. Of the different kinds of Skeletons, and methods of preparing them.

52. General diviſion of the Skeleton.

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53. The ſkull composſed of ſeveral bones.

54. *Particular deſcription of the *Sutures*, by which theſe bones are connected with each other.

55. Advantages ariſing from this mode of connexion.

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56. View of the external baſis of the ſkull.

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57. General view of the internal cavity of the cranium.

58. Marks of the longitudinal and lateral ſinuses, &c.

59. Diviſion of it's internal baſis.

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* The principal Sutures are Sutura { Coronalis.
Sagittalis.
Lambdoidalis.
Squamosa.

60. Deſcription and uſe of the *Proceſſes*, &c. in the cavity of the ſkull.

61. Remarks on the attachment of the *Dura Mater.*

62. Varieties in the ſtructure of this important membrane in different Animals.

63. Of the different *foramina* for the paſſage of blood-veſſels and nerves.

64. Remarks on the entrance of the *carotid* and *vertebral* arteries into the ſkull.

65. Of the *Rete Mirabile,* or Plexus of Blood-veſſels on each ſide of the *Sella turcica* in Quadrupeds.

66. Remarks on the curious ſtructure of this Plexus, and obſervations concerning it's uſe.

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67. Of their connexion with the proper bones of the ſkull.
68. Of the formation and uſe of the Lachrymal Duct.
69. Of the lower Jaw.
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70. The Human Countenance compared with that of other Animals.
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71. Of the alveolar proceſſes.
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72. Of the human teeth in general.
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Of their enamel, and it's uſes.
73. Obſervations on the paſſage of the nerves into the teeth.
Of the original formation of the teeth, &c.

74. Of the ſtructure of the teeth in various animals.

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75. Of the teeth of Fiſhes, and their extraordinary ſituation in ſome ſpecies.

76. Of the teeth of Serpents, and the canal for the tranſmiſſion of the poiſonous fluid through them.

77. The mode of aſcertaining the age of ſome Animals, (particularly Horſes,) by inſpecting their teeth.

78. Of Animals deſtitute of teeth.

79. Of the Beaks and Talons of *carnivorous* and *granivorous* Birds.

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80. Of the vertebræ in general.

81. Of the large canal for the tranſmiſſion of the ſpinal marrow.

82. Of the lateral holes for the paſſage of the nerves.

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83. Of the ATLAS and EPISTROPHEUS. Obſervations on their peculiar form and articulation.

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Of the Dorſal Vertebræ.

85. Of their ſubſtance, ſize, &c.

86. Of their articulation with the ribs.

Of the Lumbar Vertebræ.

87. Of their ſituation and ſtrength.

88. Of the ligaments connecting the vertebræ.

Of their intervening cartilages.

89. Of the natural incurvations of the ſpine.

90. Of it's mechaniſm and uſes.

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91. Of the falſe vertebræ and holes for the paſſage of the nerves.

92. Of the Os Coccygis.
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Of the Os Innominatum.

93. Compoſed of the *Ilium*, *Iſchium*, and *Pubis*.

94. Of the Symphyſis Pubis.

95. Remarks on the ſtructure, and different capacities of the Pelvis, in the male and female Skeleton.
96. Deformities of the Pelvis conſidered as the cauſe of difficult births.

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97. Of the Ribs and Sternum.
98. Of the cartilages of the ribs.
99. Remarks on the general ſtructure, and uſe of the thorax.
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106. Of the Metacarpus and bones of the Fingers, &c.

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109. Of the TIBIA and FIBULA.
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115. Of the Skeletons of Apes, Bears, Squirrels, &c.
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193. Of the *Papillæ* of the Tongue and the ſenſe of taſting.

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It's ſtructure, ſize, ſituation, &c.

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208. Of the diſcoveries lately made on this ſubject.

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210. Examination into the nature and properties of this fluid in men and other animals.

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223. Of the powers of digeſtion, and the different degrees of ſtrength of the *ſuccus gaſtricus* in the *carnivorous*, *herbivorous*, and *omnivorous* Quadrupeds.

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235. Of the *ſuccus gaſtricus* and the faculties of digeſtion in this claſs of Animals.

236. Of the *muſcular* ſtomach of the Gillaroo Trout, or Iriſh Trout.

237. Of the ſtomachs of *amphibious* Animals.

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239. Of the digeſtive faculties of *Inſects.*

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F. HODSON, PRINTER, CAMBRIDGE.